



Specification

Title of Invention

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Energy Conservation Flywheel with Variable Moment of Inertia (ECF-VMI)

Cross-Reference to Related Applications

Not Applicable

Statement Regarding Federally Sponsored Research or Development

Not Applicable

Reference to Sequence Listing, a Table, or a Computer Program Listing

Compact Disk Appendix

Not Applicable

Background of the Invention

Flywheels and other mechanical devices for conservation of kinetic energy.

Brief Summary of Invention

An energy conservation flywheel with variable moment of inertia (a kinetic energy storage device) includes a flywheel in a shape of a top. From a disk, sliding rods with weights (mass) attached to one end sliding outward and inward (direction is from center of disk radially) during rotation hence creating variable moment of inertia.

Sliding outward of rods/weights is caused by centrifugal forces. Sliding inward is achieved by a calibrated spring which is attached to other end of sliding rods.

This device rotates in horizontal plane.

Energy conservation flywheel with variable moment of inertia (ECF-VMI) is using Variable moment of inertia to store kinetic energy more effectively and for longer period of time.

Efficiency may be further improved by placing this device in a vacuum canister and adding magnetic bearings.

‘ECF-VMI’ can be coupled with an electric generator in order to take over surplus energy, from a driving machine, when there is a low energy demand and use it during hours of peak demand.

“ECF-VMI” device can be proportionally expanded and designed to be any desired and/or required size.

Brief Description of the Several Views of the Drawing

Figure A1 Is In Perspective View.

Figure B1 Is An Elevation View (Vertical Plane).

Figure B2 Is A Top View At Section A-A (Horizontal Plane).

Detailed Description Of Invention

1.0 The subject of this patent application is an energy conservation flywheel with variable moment of inertia (ECF-VMI). This apparatus is an assembly made up of three subassemblies, namely, of a steel frame (sf) a flywheel (fw) and a steel spring (ssp).

1.1 Subassembly (sf) consists of the following components:

- Three rigid steel plates and are of rectangular shapes bolted together with supporting legs and bolts to form a shelf like steel frame.
- Ball bearings are pre lubricated self-aligning machined ball bearings pillow blocks, square flange mount. They are fastened with bolts to a steel frame.

-Revolving spring linkage is made up of a bottom part machine ball bearing-axially Loaded (screwed to a steel frame), tension bolt and nut and top part (linkage for a spring).

1.2 Subassembly (fw-top shape) consists of the following components:

-A wheel/disk is made of steel plate, has four square openings near a disk center and four (fine surface) holes drilled from circumference to square openings, toward the center of disk (90 deg. apart). From square openings, also there are four smaller holes running toward a disk/shaft center.

-Hollow shaft is of a hollow cylinder shape and is of steel make, it has four small holes (90 deg. apart) of fine surface.

-A shaft collar is of a hollow cylinder shape, cut along cylinder height and has a setscrew.

-A wheel/disk and a hollow shaft are joined together under compression thus making one integral part.

-Steel spheres are of steel make and each one has a treaded hole in it.

-Pistons/rods are of cylinder shape of steel make with fine surfaces. Each piston/rod has one end treaded, has a stopping pin at the other end and also has a hole run axially with a setscrew perpendicular to it.

1.3 Subassembly (ssp) consists of the following components:

-A calibrated extension spring.

- Four pieces of stainless steel cable (wire rope) and a wire rope clip.

- Tension bolt and nut/revolving spring linkage.